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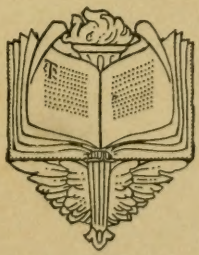
The

CHALLENGE OF WASTE

by

STUART CHASE



LEAGUE FOR INDUSTRIAL DEMOCRACY
70 Fifth Ave., New York

LEAGUE FOR INDUSTRIAL DEMOCRACY

70 Fifth Ave., New York City

OBJECT

"EDUCATION FOR A NEW SOCIAL ORDER BASED ON PRODUCTION FOR USE AND NOT FOR PROFIT"

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The CHALLENGE OF WASTE

By STUART CHASE
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INTRODUCTION

The League for Industrial Democracy presents to the public its second pamphlet on social problems. The first in the series, "Irrepressible America," by Dr. Scott Nearing, analyzes the social philosophy of the American people in these years following the world war and points out the educational task ahead.

The present pamphlet deals with the wastes involved in producing and distributing services and goods under the system of production for profit. These wastes, as the author points out, are becoming ever more widely acknowledged and the problem at issue today is no longer their existence but the extent to which they are inherent in capitalist production.

The author has served as accountant and partner of the firm of Harvey S. Chase Company, one of the largest firms of public accountants in New England; as senior accountant of the Federal Trade Commission, and as head of the accounting section of the Government's investigation into the meat packing and the milk industries. He is at present consulting accountant for the Labor Bureau, Inc. In these capacities he has had unusual opportunities to observe at first hand the conduct of the nation's business.

Mr. Chase has not been content in this pamphlet to tabulate reported wastes in industry, but has sought to obtain "an aeroplane view" of the whole industrial system, and to raise a number of fundamental questions.

What constitutes industrial waste? Why is it important to the millions of people in America? What proportion of human energy is expended today in the production of "illth," and what in the production of wealth? How does industry utilize its present equipment of men and machinery? Given adequate incentives, can an industrial system, scientifically organized on the basis of production for service, eliminate these wastes and can such a system develop adequate incentives? These and other problems he has attempted, in part at least, to answer.

The pamphlet makes no pretense at finality, for no final conclusions can be reached in regard to many phases of this subject without years of painstaking investigation into each important industry. Mr. Chase has, however, presented a series of challenges which sooner or later must be met.

We take this opportunity to thank the author for his contribution and, on Mr. Chase's and our behalf, to express our appreciation to those members and friends of the League who have helped in its preparation. The League plans in coming pamphlets to deal with "Industrial Incentives" and several other questions raised in this monograph.

HARRY W. LAIDLER,
Director of Research, L. I. D.

THE CHALLENGE OF WASTE

By Stuart Chase

The wastefulness of the present industrial system has long been subject to attack. Not only have opponents of the existing order drawn attention to its inefficiency, but business men themselves have from time to time denounced certain leakages of the system as indefensible. Thus Mr. Hoover has gathered together a group of engineers who have carefully studied the operation of six industries—textiles, printing, shoes, metal trades, men's clothing and the building trades—publishing, as a result of their investigation, a remarkable symposium on the preventible wastes in each[1].

THE LESSON OF THE WAR

During the war, governments both here and abroad were driven to a sharp realization of the extent of economic waste. The maintenance of "business as usual" made it impossible to mobilize and equip a fighting force and at the same time to support a civilian population. "Business as usual" was, therefore, forced to give way to a co-ordinated plan, crude, but in certain respects very effective. The industrial resources of the nation were surveyed—both as to raw materials and plant facilities—its productive possibilities measured, and its major requirements calculated. This was done hastily and often inaccurately, but it sufficed to bring about a tremendous release of labor power and raw materials into war industries and so-called "essential industries." The war administration placed the transportation system on a national, unified basis with competitive hauls eliminated. It shut off capital from non-essential industries. It restricted the consumption of luxuries, encouraged certain crops, rationed and husbanded coal, reduced the output of excessive grades and styles, and conserved necessary materials.

[1] Federated American Engineering Societies, Committee on the Elimination of Waste (Hoover Engineers), *Waste in Industry*.

As a result, the United States was able to support five million of its most vigorous workers in productive idleness, supply them with unlimited munitions of war, transport great numbers of them overseas in American bottoms, and still maintain the population at probably the highest average standard of well-being ever enjoyed. In other words, with perhaps a third of all industrial workers either in the army or engaged in producing munitions of war of no consumable value, the remaining two-thirds, by operating on a co-ordinated plan, produced enough to supply the army, the munitions workers and themselves with the necessities of life on an unprecedented scale! The wastes of productive effort under the reign of normalcy were thus proved beyond all gainsaying.

FUEL CONTROL

Take coal, for instance. Mr. Robert W. Bruère has given us an excellent picture of how the war exposed waste in this basic industry.[2]

> "From the high central tower of the Fuel Administration the people of the United States for the first time caught a fleeting glimpse of the coal industry as a whole and of the relation it bears to national and international industrial life. . . . When America entered the war, she resembled, with respect to her primary source of mechanical energy, a municipality dependent for its water supply upon 11,000 separate wells, owned and operated primarily in their individual interests by thousands of enterprising individuals, with hundreds of separate systems jostling in the highways that needed to be kept clear for soldiers and guns; its people bidding against one another, offering fabulous prices for water, yet parched with thirst. . . . With 11,000 coal mines in operation, the engines of the nation were running cold for lack of fuel."

Mr. Bruère should know, for he sat in that high central tower. He goes on to tell how, for the period of the war, the coal industry functioned as a co-operative public service. The Fuel Administration went about its task precisely as an engineer would tackle the job of converting 11,000 wells into a modern system of water supply. It dealt with the

[2] Bruère, *The Coming of Coal.*

coal fields as a single great reservoir. It worked out a budget covering the needs of the essential industries and of the domestic consumer. It made maps (and acted on them) charting the coal-producing and coal-consuming territories, divided the nation into zones, eliminated cross-hauling and thus "balanced the load" between the demands of consumers and the capacity of producers. Where only 552,000,000 tons of bituminous coal had been produced in 1917, the Fuel Administration's budget for the year ending March, 1919, called for 624,000,000 tons. By December 21, 1918, actual shipments to tidewater were 9 per cent ahead of the budget! The Great Lakes program called for 28,000,000 tons of cargo coal; a total of 28,153,000 tons was supplied. "Such results were possible only because of complete control of shipments, and the full information on which to proceed. It was an amazing and illuminating demonstration of the fact that our greatest national resource could be administered for the benefit of the whole nation. It was no longer a possibility, the thing had been done."

Broadly speaking, however, the United States was only an amateur in the matter of co-ordinated control, as was to be expected from its late entrance into the war. Sir Leo Chiozza-Money, the noted English statistician and economist, has written an exhaustively documented account[3] of how the British Empire co-ordinated its industrial life as the one method of avoiding defeat and humiliation. He constructs a telling outline of a whole nation turning from the playthings of stock exchanges, haggling of markets, and competitive advertising, to the stark, underlying realities of producing and delivering food, coal, clothing, ships and munitions—on the principle that a straight line is the shortest distance between two points.

War, as we shall see, is in itself the quintessence of waste, but the war just passed has taught at least this one important lesson: *Given enough incentive, it is possible for human intelligence to rise to the height of organizing and controlling a vast industrial system to a perfectly tangible end.* Though the end was death and the vainglory of "national honor," men there were, and minds there were, big enough to seize the whole industrial structure—groggy with profit-seeking—and shake it and hammer it into a workable vehicle for

[3] Chiozza Money, *The Triumph of Nationalization.*

producing given things at given places in a given time. Yes, the "thing has been done." And the importance of having done it, from the standpoint of the conception of waste now to be outlined, is indeed great.

WHAT IS WASTE?

In spite of the fact that industrial waste has long been a matter of interest and speculation, it has never been subjected to much critical analysis. It has for the most part been developed as a patchwork of uncorrelated observations. What has been particularly lacking has been the absence of any reliable standard by which waste may be measured.

People tend to think of waste—when they think of it at all—in two categories, garbage cans and Taylor systems. They think of waste paper, refuse, sewage, odds and ends generally. They think of the patriotic exertions of fellow townsmen beseeching them to win the war by baling their Sunday newspapers, or by saving their peachstones. The Department of Commerce instituted a waste reclamation service to promote just this sort of thing. And, of course, waste of this nature is a real economic problem. There are many interesting methods abroad, technical and otherwise, for turning refuse normally thrown away into valuable products. But when all is said and done, this type of waste is only a drop in the bucket from the standpoint of an aeroplane view of the whole industrial system.

Business men think of waste as synonymous with "inefficiency," connoting in turn all the hue and cry of the past ten years in pursuit of the goddess efficiency. How many youths have knelt—their correspondence school books in their hands—before this deity. Pep, efficiency, success—the holy trinity.

But efficiency, thus pursued, is only another method of increasing profit under the price system. It deals with means, not ends. It provides methods, and often very sound ones, for reducing costs, increasing output, and getting to windward of one's competitors. But it is to be doubted if business men would be interested in a universal installation of efficiency methods resulting in lower industrial costs, but unchanged profit levels. The widespread use of what Veblen calls "business-like sabotage" makes it perfectly evident

that efficiency from the social point of view is never contemplated for a moment. The captain of industry uses efficiency devices if they promise to increase his profit. On the other hand, he will strangulate an industry—cane sugar for instance—if that offers a better chance of strengthening his balance sheet. Efficiency is only one of the weapons in his armory. It may be used for social or for anti-social ends.

Not in cost systems, adding machines or even discredited methods of brick-laying, is the heart of the problem of waste to be found, any more than in the garbage pail. An efficiency system can be introduced into a factory which manufactures poison gas or patent medicines. A sound theory of waste, as we shall see, would refuse to recognize the necessity of making poison gas or quack remedies at all.

No. The question of waste must be approached with fresh eyes which see the economic process as a whole, which see particularly the physical stuff of things under the metaphysics of money and credit and price. The Fuel Administration from its high central tower did not cast a budget in terms of money, but one in terms of tons of coal. Dollar bills under a boiler never raised a pound of steam.

There is of course no department of life or industry in which, from some more or less logical viewpoint, statistics of waste could not be compiled — heart-rending statistics. But with the shifting and changing of these viewpoints, all hope of an authentic case against waste—and particularly its quantitative measurement—tends to vanish. Thus the vegetarian points out with unimpeachable accuracy that for one unit of human food value found in beef, sixteen units have been sacrificed in the corn which feeds the steer. Here is a very wasteful process indeed from a certain standpoint, but the stubborn fact remains that most Americans demand beef. Again, the anti-nicotine advocate appals us with the sheer waste involved in growing, manufacturing and selling a minor poison. But tobacco has reached the position of a necessity in the workingman's budget. It cannot be eliminated out of hand. Again, some inquisitive citizen with a mathematical turn of mind will calculate the potential horse power of all the rivers of a continent—compare it with the developed water-power—and write the balance off as waste, in the Sunday supplement. The scientific woods are full of such charming followers of the Absolute.

It is the very diversity of these standpoints which gives us pause, and makes it imperative that we find if possible a lowest denominator which will pass the pragmatic test as a genuine measure of waste.

THE WANTS OF MAN

Before the deficiency of a thing can be measured, a standard of judgment must be set up. Waste cannot be measured or even condemned, unless the clear potentialities of a non-waste method are established. Two hundred years ago—before the first steam engine—there was no waste in pumping out coal mines by hand. The better method lay in the womb of time.

In the last analysis, *the sole aim of an economic system is to supply the wants of man.* It is quite obvious that the present system is mainly concerned with supplying money profits to certain favored individuals, with the satisfaction of wants coming in the back door as a by-product. But by and large, from century to century, men work in order that they may eat—(and sometimes for the fun of working). If we can define the wants of man, we have then a yardstick which may be clapped down over any industrial system to determine:

(1) How far the system is concerned with producing such wants.
(2) How efficiently it uses available technical knowledge to produce them.
(3) What proportion of the population are failing to receive the quota as defined.

What are the wants of men?

Here the cynic waits for the whole theory to collapse on its own threshold. What god or demon will draw a ring around the wants of man and yoke to the statistician's plow? Agreed, gentlemen. The wants of man are impossible of exact definition. They are constantly growing, shrinking, changing. In a certain sense they are different for every living person. One man's meat is sometimes another man's poison. Any allowable definition of the wants of man must be built without a roof—it must be open to the sky.

What does man want? Life! A more abundant life! Bread and beauty, if you please. Our cynic as well as

our artist must agree to this. What constitutes a more abundant life? More bread, more beauty. And we cannot permit cynics and artists to argue that this does not include certain unchanging classifications of wants which the facts as to man's place in nature render imperative. Thus everyone must eat—and he must eat certain combinations of protein, fats, carbohydrates, together with the accessory vitamines, or he sickens and dies, and his aesthetic wants become a matter of very secondary consideration. He must in certain climates have clothes to wear to keep him from cold or heat, and in nearly all climates he must have a house or shelter of some sort in which to live, and particularly to protect his children.

Food, shelter and clothing comprise the most elementary wants of man. After them follow other classifications almost equally essential to mankind in civilized communities. The development of communication between people—channels without which human society is impossible—an alphabet, a language, books, education are all imperative wants of man. Religion of some sort he wants. Art he demands—music, painting, architecture and design, poetry, literature and the theatre. Recreation and play he wants — dancing, running, swimming, mountain climbing, games. The latter is a very fundamental want, for the body declines rapidly if it is not satisfied. Health he wants, and the services of doctors, nurses, hospitals, sanitary measures. Love he wants —not only sexual, but all the pleasant relationships of family and friends. Some men just want to know. They are moved by a divine curiosity. We call what they do pure science and it is one of the most precious of man's wants.

A system of production which turns out the facilities for satisfying these wants in reasonable abundance and in some sort of relative balance, can be taken as a non-wasteful system so far as its aims are concerned. The technical efficiency of the process involved, and whether or not unnecessary labor energy is consumed therein, is a further question which demands attention, and which we will discuss presently.

THE MINIMUM BUDGET

These ten fundamental wants of man, broadly interpreted, cover practically the whole field. The only limitation which a theory of waste can put upon them is that the quality of the

goods and services which go to the satisfaction of these wants should be reasonably sound and wholesome, free from adulteration and degradation, and that the more ornate and complex goods and services should not be produced until the simple and more basic wants have been met. In respect to this latter proviso, we already have an excellent quantitative list in the minimum Budget of Health and Decency compiled by the United States Department of Labor. This budget is designed to meet the personal wants of a family of five persons. It lists several hundred articles of food, clothing, shelter and incidentals—lists them in terms of physical units. It is possible—and in fact it has been done in part—to multiply out each item on this family budget for all the 21 million theoretical families of five in America, and thus roughly determine the gross requirements of certain basic wants. In 1921, for instance, we needed, on this basis, about:

3,800,000,000 square yards of cotton goods;
635,000,000 square yards of woolen goods;
95,000,000 dozen pairs of stockings;
290,000,000 pairs of shoes;
11,000,000,000 pounds of meat;
5,000,000,000 pounds of sugar.

Perhaps 90 per cent by weight of all our physical wants can be reduced to perfectly tangible commodities, in perfectly tangible quantities up to a certain stage of manufacture. Individual preferences will tend to determine the ultimate stages.

Here then is a possible standard—rough, un-roofed, but capable, as will be shown, of measuring the wastes of the present economic system. It should be observed that the economic system as we have discussed it here comprises all human effort which goes into the production of goods and services—the labor of the housewife, the artist, the scientist and the priest, as well as that of the industrial worker and the farmer.

OUTPUT OF PRESENT SYSTEM

From the standpoint of the ten fundamental wants herein enumerated, it is immediately apparent that (1) a portion of the output of the present system goes to satisfy those wants; that (2) another portion can only be classed as products seriously detrimental to man and quite outside the

category of wants; and that (3) the remainder falls into an intermediary classification consisting of items which do no particular good and no particular harm to the consumer of them.

In the first class fall foodstuffs, textiles, housing, schools, parks, medical attendance, concerts, highways, laboratories, and so forth.

In the second class fall many patent medicines, distilled spirits, opium, machine guns, poison gas, prostitution, gambling and speculation, quackery, super-luxuries, dishonest advertising, "Billy Sundayism" and all else that breaks and distorts the bodies and the minds of men.

In the third class fall chewing gum, much of our advertisements, fashions, moving pictures, tobacco, best sellers and the like.

It is to be noted that the second class, from the standard erected, is almost totally composed of waste, and the effort concerned therein worse than thrown away. The third class provides a rich field for waste research, but cannot be ruled out in toto.

A further qualification is necessary in respect to the first class. While from a pure classification standpoint this group contains no waste (barring the question of technical processes to be discussed later), as a matter of fact it is found that many of these goods and services are debased. Thus foodstuffs may contain deleterious poisons to preserve and sell them, clothing may be shoddy, houses badly built, art and recreation commercialized, the schools used to stifle the creative instinct, religion corrupted. It becomes necessary, therefore, to subject the first class as well as the third to analysis for possible sources of waste.

Let us add one further note on the output of the first class. If enough basic necessities—say in the terms of the minimum budget of health and decency—were produced and distributed to maintain the last family in America at the level of that budget, we would not be so greatly concerned with the wasted effort expended in classes two and three. Provided there was enough to go around—and that nobody was in actual physical want—we could look with a certain philosophical toleration on the output of such superfluities as tobacco, chewing gum, steam yachts, cosmetics and even patent medicines. But what shall we say if it develops that the

output of basic necessities in class one is at the present time utterly inadequate? What if the great majority of American families are now living *below* the minimum budget of health and decency? Then the indictment of waste in the other two groups takes on a new and sinister aspect.

IS THERE ENOUGH TO GO AROUND?

According to the figures of the National Bureau of Economic Research recently made public—undoubtedly the most impartial and authoritative figures of national income ever compiled[4]—it appears that from 1913 to 1919, the total money income of the people of this country, if divided equally among them on the basis of a theoretical family of five persons, would just about equal the money cost of the minimum budget in each year, after allowing a percentage for necessary saving. That is, each family would get, on the basis of an equal division, a money income of from $1,400 in 1913 to about $2,500 in 1919. The items of the minimum budget priced year by year as the cost of living rose, follow substantially the same curve from $1,300 to $2,550.[5] This national income in dollars, needless to say, included the purchasing of goods *in all three classes,* so it cannot be held that there was a sufficiency of class one products bought back by the income receivers. To make matters worse, the Bureau found, as a matter of course, that nothing like an equality of income obtained, but rather that 5 per cent of the families received from 20 to 30 per cent of the total income. This immediately operated to plunge the average of the remaining 95 per cent of the families *below* the line of the minimum budget, even had their income gone for nothing but basic necessities.

When Senator Kenyon tells us in his housing report in

[4] Mitchell and others, *Income in the United States,* 1921. N. Y.: Harcourt & Brace.

[5] In round amounts the figures year by year are as follows: (The average income per family has been reduced 20 per cent in each year to allow for new construction.)

	For a family of five persons.	
Year	*Average Income*	*Cost of Living*
1913	$1,420	$1,280
1914	1,340	1,320
1915	1,430	1,350
1916	1,780	1,510
1917	2,090	1,820
1918	2,340	2,230
1919	2,480	2,550

1920,[6] that 16 million people in America did not live in houses fit for human beings; when we read the alarming statistics of undernourishment in school children; when we walk through the slums of a great city, through the poor white sections of the South, or through a coal mine district, we know that these income figures of the Bureau only state the obvious. For those who have eyes to see, it is a commonplace that America does not produce and distribute today sufficient basic necessities to keep half of its families at the level of the minimum budget of health and decency. *The new and significant thing* about the Bureau's figures is the fact that if we took all the excess income away from the rich and distributed it equally to the poor, still the minimum budget would not be met unless practically every cent were expended for the basic necessities of class one, and the output of classes two and three eliminated altogether. In other words, if we only produced basic wants and distributed them equally, there would only be about enough to go around on the basis of the minimum budget. The necessity of not only eliminating non-essential goods and services, but of speeding up the production of essentials at the same time, is thus made manifest.

THE EXTENT OF WASTE

We have erected a rough standard to measure the wants of men. We have in a general way classified the output of the present economic system. Our next problem is that of developing, if possible, a method for measuring the extent of industrial waste.

We have already seen how the prevailing system is honeycombed with wasteful goods and services. These have a market, however, or they would not be produced. Somewhere people are found who can be prevailed upon to buy them, and the psychology of this forcing of products is a very interesting subject in itself. Money therefore takes no cognizance of wealth or "illth" (to use Ruskin's phrase), but reduces all output to a single unit. A dollar will buy equally ten loaves of bread or a dose of opium. It becomes largely meaningless for the purpose we have in hand. Furthermore, the extreme lack of dependability in the value of the dollar in terms of other commodities from year to year, raises

[6] *Reconstruction and Construction*, Senate Document, March, 1920.

further objections to its use in these premises. Imagine for instance trying to write the economic history of Russia during the past five years in terms of the Russian ruble.

Cutting under the shadow of money to the reality of the underlying physical factors, it is seen that what really happens when society maintains a harmful industry, is that the labor power of a large number of people is diverted from the production of goods to the production of ills, that much good material in the shape of plants, machinery, storehouses, paper-stock, industrial alcohol and good drinking water, is so diverted, and that the channels of transportation and distribution are clogged with the shipment and sale of an article which satisfies no real human want. Plant, machinery, and warehouses can all be converted back in turn to labor energy or the natural resources which went into their construction—such things as iron ore, standing timber, crude oil, granite, waterpower and what not.

The quantitative measurement of waste therefore resolves itself into two basic factors:

1. Energy of hand and brain devoted to ends which do not supply the wants of man.
2. Natural resources, raw materials, and power similarly diverted. (Perhaps, in the last analysis, natural resources are convertible into labor power by virtue of the fact that it takes labor power to render them useable).

REDUCING WASTE TO LABOR HOURS

Opinion may well differ, and methods vary widely as to the most effective means of exhibiting waste on this basis. A possible method suggested, however, is to show the approximate number of workers employed directly in an anti-social industry, and so far as can be determined, those employed indirectly; the labor hours they expend in a year; and the approximate acreage of good standing timber, the tonnage of coal, iron ore, copper ore, oil and what not, that the industry has destroyed in erecting its plant and carrying on its current operations. Considered with such measurement, the amount of horsepower or similar energy units wasted may be effectively employed — though again such energy rests finally on an original expenditure of labor and raw materials.

That such measurement can only be rough approximations, goes without saying, but rough as they are, they will show the cost of the industry to society as no money values can ever hope to do. Furthermore they are cast in such form as to be readily converted into estimates of what this wasted effort might mean in another industry which functioned directly towards the satisfaction of the wants of man.

On this basis, the wastes of a given industry necessarily include not only the direct labor and materials used, but the labor and materials expended by the transportation system in handling the product, and the distribution system in selling it—not forgetting advertising outlays in labor hours and good white paper.

We submit therefore that the method which should be employed in evaluating waste, is to determine what the wasteful process costs society *in terms of lost labor hours, lost materials, and lost horsepower,* and that the most effective way of showing the loss is to calculate what it might mean if utilized in furnishing wealth—instead of—"illth." A rough calculation shows for instance that the elimination of the patent medicine industry would release energy enough to give every child in the country between 7 and 13 years of age, six months extra schooling.

"ILLTH"

What the aggregate output of "illth" amounts to in America has never been determined. We only know in a general way the kinds of things and services which go to make it up. First of all there are super-luxuries — such things as palatial establishments, unlimited servants, costly jewelry, luxurious banquets and entertainments, furs, motors, private yachts, etc.—things which lie outside the range of comforts and conveniences. Then there is the vast output of advertising which, in 1916, was said to aggregate over 2 billions a year. (It must be double that by now.) Advertising has a distinct function in letting us know about new products, and about coming events. Only a small percentage of modern advertising is concerned with this necessary end, however. The bulk of it is composed of what can only be termed loud nasal lying as to the relative merits of competitive products as like as two peas, or, more sinister still, the forcing

upon us of things which we do not need, and which often hurt not only our pocketbooks, but our bodies and our souls as well. Think of the beauty which sign boards mock and destroy. (There are 5,000 sign boards on the east side of the Pennsylvania tracks between Washington and New York. I counted them one afternoon.)

Then there is the waste of armaments, a self-evident leakage against which even business men protest. They cost us two to three billions a year at the present time in America. This is enough to cover the country with 300,000 miles of good macadam roads.

There is the vast waste inherent in abrupt changes in fashions, engineered by a little group of designers, who hold to the sound principle that quick fashions mean quick turnover. There are insurance schemes, stock exchanges, law courts, banks, insofar as these activities serve no human want. There is chewing gum, adulterated confectionery and drinks. There is the great toll of alcohol and drugs. There is the very considerable industry concerned with the production of gambling devices. There is the time-honored industry of prostitution. There are all quacks and mediums, and cure-alls, and get-rich-quick performers. And probably a considerable percentage of all shows and entertainments are an adulteration of genuine recreation and art.

THE LUXURY BILL

In the single category of luxuries alone, the Secretary of the Treasury estimated that, in 1919, the total luxury bill of the country was 22 billions of dollars. A careful scrutiny of these detail figures, however, shows that about half of this total would fall under the head of reasonable comforts, and could not, according to our definition, be classified as waste at all. But a cool eleven billions still remained as wanton extravagance. Eleven billions in money in 1919 was the approximate equivalent of the annual effort of about seven million workers. If six or seven millions of our total working population are concerned with the production and distribution of super-luxuries alone, it is not improbable that the total labor force concerned with all "illth" is at least twice that amount or from twelve to fourteen million workers

out of an aggregate working population of forty-two millions. (Census of 1920.)

THE WASTE OF IDLENESS

We have considered in some detail the waste involved in producing goods and services which do not satisfy any real human want. This is the first major indictment against the efficiency of the prevailing economic system. There are two more. In addition to the production of "illth," we find the present system guilty of supporting great numbers of potential producers in idleness on any given working day, and we find that even when workers are busy producing genuine goods, the technical methods which they employ are often prodigally wasteful of raw materials and human effort.

During the starvation time in the Virginia colony, Captain John Smith, engineer-in-chief, laid down the rule that "only those who work shall eat." Just as it is impossible to conceive, in the long run, of an economic system having any other justification except the satisfaction of human wants, so is it impossible to conceive of any other rule of work except that laid down by the worthy Captain. If we live in society and take the thousand and one things which others have made for us, it is axiomatic that we should give society something in return. Even defenders of the present order dare not run counter in doctrine to this fundamental and instinctive concept of justice, no matter how much they may run counter to it in fact. Thus an elaborate mythology has been constructed covering the compensating services of the leisure class—the invaluable *quid pro quo* which they render society by "saving" and "abstinence," by denial and mortification. Behind the cover of this carefully nurtured doctrine, the idle rich can pursue their pleasures with the utmost moral satisfaction.

The theory of waste must be based flatly on the assumption that all able-bodied adults who live in society, must give some equivalent for what they take—this equivalent not to consist solely in moral doctrine. Libraries of books could be written, and unending arguments could be spun as to what constitutes an "equivalent." Is it measurable in hours, pounds lifted, hedonistic units or the net precipitation of sweat glands? Obviously all attempts to make a nice balance

between debits and credits in these premises can only result in a good deal of nonsense. We have to fall back on the pragmatic test. Is a given individual able-bodied? Is he a potential worker, or a genuine dependent? If the former, is he doing something which contributes to the wants of man as we have stated them? Is he making this contribution according to the best of his ability, and on the basis of a reasonable amount of time expended? From this standpoint, it is possible to analyze the performance of any individual the country over, and to determine whether or not he is rendering back to society a reasonable equivalent.[7]

Here in the United States are 107 millions of people—men, women and children. They are all consumers. About thirty million men, ten million women and two million children are working or trying to get a chance to work. They are called producers, but, as we have seen, in the case of many millions of them the term is ironic because of the "illth" into which their effort goes. Another eighteen million women are working hard and all the time—apparently unaware of 8-hour law provisions—in their homes. The balance of the population—say forty-seven millions—is made up of dependents—children, old people, sick people, defectives, hoboes, and the idle rich.

It is clear that each of the forty-two million producers has at least one dependent person to support beside himself—one and one-half to be exact. With this load of dependents always upon his back (and under a more humane system it is probable that the load would be increased by keeping children and elderly people out of the fields and factories), it becomes imperative that all available persons join in the service of producing wealth.

But the problem of idleness is not primarily a problem of shirkers. After all, the idle rich and the vagrants do not constitute a very imposing numerical total—say 300,000 at the outside. No. The idleness factor of waste springs primarily from the failure of the present system to provide opportunities for those who genuinely desire to work. It is not a question of shirking, it is a question of closed doors and barred fields.

On any given day, from four to eight million of the forty-

[7] I have repeatedly tested my own performance and that of many of my friends with this standard.

two million potential producers are idle. This means four to eight million man-days wasted. Who are these idle people?

First, there are the unemployed—two million in the best of years, five to six million in such years as 1921.

Secondly, there are the strikers and locked-out workers. No allowable censure can attach to them personally, but the naked fact remains that untold millions of man-days are lost to society from these sources.

Thirdly, there are the three million workers, who, on any given day, are sick or incapacitated. It has been estimated that from one-third to one-half of this sickness is preventible. The fraction—not the total—clearly falls under the head of waste.

Fourthly, there are the voluntary loafers and the idle rich —the only genuine shirkers.

Adding these items up, we see that, in the best of years, four million, or about 10 per cent of the total working force, is always idle, and that in panic years like 1921, at least eight million, or nearly 20 per cent is idle.

WASTES IN THE TECHNICAL PROCESS

We have already pointed out two main types of waste as judged from the standpoint of the wants of man. The first is waste in the production of "illth," as exemplified by certain patent medicines; the second is the waste of human idleness. Now we come to the third and last great classification—waste in the technical process itself. Thus an electric light company may be engaged in the altogether excellent objective of manufacturing light, heat and power for the people of a given city, but it may be hauling coal a thousand miles to burn it inefficiently under boilers, filling the city with soot and dirt, when coal distillation at the pit-mouth with high tension transmission lines, or near-by water-power, would furnish the needed wants at a fraction of the present cost.

Here the student of waste enters a vast field indeed. The question of what constitutes the best technical method of supplying man's wants is a never-ending one. It ceases only when invention and scientific research cease. Machinery one hundred per cent efficient today, may be worth so much scrap

metal tomorrow. The only possible course to pursue under the circumstances is to take the most approved technical process as a standard, and measure the gap between it and the process actually in use, after making due allowance for the unproductive labor and materials needed to scrap or adjust the old, and to erect the new. *Only when it is clear that more can be gained in output by the new method, than will be lost in the cost of adjustment, does the old method stand condemned as a wasteful one.* This same line of reasoning would seem to apply to the economic justification of introducing all future improvements in technical processes.

Measurements in this field may be approached from two angles. First, what can be saved by rearrangement and a rerouting of the production flow in the existing plant ("plant" including both the productive and distributive mechanism) *without* embarking to an appreciable extent on new construction. This problem was tackled by the Fuel Administration. Second, what can be saved by a complete reconstruction of plant in line with the present state of the technical arts. This was the problem of the Emergency Fleet Corporation.

Thus it is possible to contemplate—and perhaps to measure roughly—the saving that might accrue to the people of the United States if the existing plant were utilized solely to satisfy the wants of man. Or it is possible to contemplate —but probably impossible to measure — the saving which might accrue if the existing plant were drastically reorganized in line with modern scientific knowledge—if waterpower and coal distillation were developed as they might be; if beehive ovens in the coking of steel were replaced by by-product ovens; if the chaos of retail distribution was scrapped in the interest of properly located warehouses and sample stores; if the pressure of skyscrapers and subways on city populations were removed; if farming and fertilizing processes were co-ordinated and revised; if scientific forestry replaced timber-mining; if natural gas were conserved instead of blown off into the air by the billions of cubic feet; in short, if mankind were intelligent enough to use the vast potentialities of its existing and proved knowledge to satisfy its own wants. No consideration of this fascinating field is tenable, it must be repeated, without a realization of the im-

mense construction cost (measured in labor energy and materials) of a transition period.

It is in the field of applied technical knowledge that business men and engineers have recently been giving marked consideration to the question of waste. Each industry presents a host of problems in both its production and distribution aspects. In addition the whole question of a proper coordination between industries demands attention. Modern economic processes are so interlocked and so interrelated, that it is practically impossible to set off one industry by itself and study its performance as a separate unit. There is no industry which does not cut across the field of other industries, either in respect to its raw materials, its sources of power, its transportation facilities, its distribution, and its markets.

Some day perhaps the super-engineering staff will come to build a high central tower from which not only coal problems but all industrial problems can be surveyed and measured, and intelligent plans laid for the production of human wants on the basis of a minimum of friction and waste. That such a staff did actually function in England during the war—though its aims were not the aims which concern us here—gives us hope that the proposal does not lie outside the administration capacity of the human mind.

FAILURE TO UTILIZE PRESENT EQUIPMENT

There is an immense amount of data already at hand in respect to wastes in technical methods. One factor which has given engineers much concern is the chronic failure of most industries efficiently to utilize their equipment. It appears that, on the basis of the present output, they are on the average about 40 per cent over-built. That is, 40 per cent of their buildings, machinery and other physical facilities are on the average never used. They just stand as silent and empty monuments of competitive waste. In periods of business depression—certain industries such as the building trades—will drop to 5 or 10 per cent capacity.[8] There are three times as many lumber mills in the country as are needed to cut the annual supply of timber.[9] For the whole year 1921, the

[8] U. S. Department of Commerce, *Survey of Current Business*, December, 1921.

[9] Benton Mackaye. *Unpublished manuscript.*

steel mills operated at less than 40 per cent of their capacity.[10] There are a third too many soft coal mines opened on the basis of either consumption needs or railroad cars to move the tonnage.[11] The shoe factories can turn out 525 million pairs of shoes a year on an 8-hour day basis, while the demand never exceeds 300 million pairs.[12]

Engineers and statisticians have estimated excess capacity in various industries as follows:

Men's clothing	30 per cent.	[13]
Printing	50 per cent.	[14]
Boots and shoes	40 per cent.	[15]
Metal trades	40 per cent.	[16]
Copper and brass	35 per cent.	[17]
Blast furnaces	40 per cent.	[18]
Woolen spindles	28 per cent.	[19]
Lumber mills	67 per cent.	[20]
Brick	20 per cent.	[21]
Cement	25 per cent.	[22]
Ship building	60 per cent.	[23]
Carpets and rugs	40 per cent.	[24]
Simple average	40 per cent.	

DESTRUCTION OF GOODS

Even when the industrial plant[25] is running, we find that enormous quantities of the output never reach the consumer at all by reason of defects in the distribution and market mechanism. In a period of so-called "over-production," we see night riders burning tobacco and cotton, corn used as fuel, milk dumped into rivers by the thousands of gallons, one-half of the potato crop rotting in the ground, carloads

[10] U. S. Department of Commerce, *op. cit.*
[11] Bruère, *op. cit.*
[12] U. S. Council of National Defense. *Studies in the High Cost of Living.*
[13] Federated American Engineering Societies, *op. cit.*
[14] *Ibid.*
[15] *Ibid.*
[16] *Ibid.*
[17] *Management Engineering*, January, 1922.
[18] Walter N. Polakov, *Iron and Steel Wastes.*
[19] U. S. Department of Commerce, *Survey of Current Business*, December, 1921.
[20] Mackaye, *op. cit.*
[21] Senate Document on *Reconstruction*, March, 1921.
[22] *Ibid.*
[23] U. S. Department of Commerce, *op. cit.*
[24] *Ibid.*
[25] Including farms, factories and mines.

of watermelons floating down the Potomac, boat loads of bananas in the waters of New York harbor, textiles and machinery "dumped" in foreign markets at a fraction of the price the domestic consumer is forced to pay, sugar and coffee crops wantonly destroyed. Thus even if the efficiency of the productive mechanism chances to be high, there is always the chance that this very fact will so lower the efficiency of the distribution mechanism—due to price considerations—that the resulting output will be dumped or destroyed rather than permitted to reach the consumer . . . the same consumer, it must be remembered, who receives considerably less on the average than the minimum budget of health and decency calls for.

The coal industry has recently been subjected to a bombardment from the standpoint of waste. Engineers have found that not only is it excessively over-capitalized, but that its underground methods are so bad that coal miners—on the days when they get a chance to work—average only three or four hours on the face of the coal.[26] The articulation of the out-put with the transportation system is wretched. The mines can dig 18,000,000 tons a week. The railroads have only cars enough to carry away 12,000,000 tons. When we come to the utilization of coal, the scandal grows ever greater. The ordinary steam engine only secures 6 per cent of the thermal energy contained in the coal which it burns. Dr. Charles P. Steinmetz has estimated that perhaps three-quarters of all coal mined could be saved by the introduction of better methods of utilization. Coal, furthermore, contains great quantities of dyes, tars, fertilizers and other valuable by-products, which are now largely thrown away.

And what engineers have discovered concerning the technical wastes of coal applies pretty well down the line to all other industries.

A SUMMARY

Let us recapitulate the three great classes of waste as we have tried to outline them, and form a very rough estimate, if we can, of the stupendous total involved.

First, there is the waste in output by virtue of the fact that a given product or service bears no relation to the wants

[26] Archbald, *The Four-Hour Day in Coal.*

of man as defined. How much of the total output of America falls under this category awaits a basic survey. Secretary Houston's figures on super-luxury production alone lead us to believe that not less than one-third of the total labor power of the country is lost in this field. And that means the labor power of about 14 million persons.

Secondly, there is the waste by virtue of idleness—the failure for one reason or another, to render an equivalent for things consumed. This we saw amounted to the labor power of from four to eight million able-bodied persons, depending upon whether business was booming or depressed.

Thirdly, there is the waste by virtue of stupid and antiquated technical processes—both in the mechanism of production and of distribution. The coal industry functions at less than 50 per cent efficiency today due to technical causes—causes which can be remedied without an undue penalty in new construction cost. If coal be any criterion for industry in general, it is probable that one-half the labor of the twenty-four million workers who are now making and distributing goods and services which satisfy the wants of man, is wasted labor from the standpoint of modern technical methods. And that means twelve million workers more. Recapitulating:

Labor lost by reason of producing "illth"
13,000,000 man years
Labor lost by bad technical methods, 12,000,000 man years
Labor lost through idleness (average)
5,000,000 man years

Total labor lost.....30,000,000 man years
Total productive power, 1922.....42,000,000 man years
Ratio of Waste, 70 per cent.

This can only be a crude, illustrative estimate. Some engineers have declared that the ratio of waste in the present system is 90 per cent. Conservative business men believe that it is less than 25 per cent. But if it can be shown that the various elements of waste outlined herein aggregate more than 50 per cent of the total labor power of America (with corresponding waste in raw materials) it follows relentlessly that the elimination of that waste would double the capacity of the country to make sound goods and services — goods which really mean the satisfaction of human wants. And this would operate to banish poverty, to raise the last family

above the line of the minimum budget, and at the same time to provide for moderate luxuries and comforts, and a reasonably wide range of income levels.

That is the challenge which the problem of waste presents to those of us who dream of a high central tower directing and simplifying the economic destinies of men.

HUMAN WASTES

The problem as we have outlined it, has dealt only with the wants of man, and the possibility of measuring the sum total of labor power and raw materials, which, under the prevailing economic system, are expended to other ends. Students of waste hitherto have tended to confuse the loss due to wasted effort with the *effect* of such loss on human life. "Human" wastes are in a quite different category from labor and material wastes. If labor and material wastes are so large that the wants of man are not adequately met, then and only then do human wastes arise. They are in the nature of a deficiency factor. It is possible to conceive of immense labor wastes, resulting in no human wastes at all in a society which had developed labor-saving machinery to a point where it could carry all sorts of irrelevant activities, and a large margin of idleness, and still satisfy human wants.

The modern industrial system however has reached no such point. The figures of national income already examined prove that. The normal wants of more than half the population of America—from the standpoint of the minimum budget—are not satisfied, with the resulting misery, suffering and human cost.

The measurement of human waste largely defies the statistician. It is compounded of tears and pain and twisted souls. It carries most of the world's crime and most of the world's thwarted aspirations. In its embrace, the creative instinct of untold millions lies buried.

The failure of the present industrial mechanism to throw out enough of the goods and services men need, together with the pressure under which great numbers of workers are placed by reason of the waste and loss involved, results in these outstanding types of human cost:

Malnutrition;

Overcrowding;

Inadequate clothing;
Industrial accidents and diseases;
Infant mortality;
Illiteracy and undereducation;
Crime and prostitution;
Alcoholism and the use of drugs;
Deadening of the play instinct;
Death of the creative instinct.

The human cost of war might properly be added to this list. War implies a staggering waste in labor and materials on the one hand, and an even more staggering human cost in death, wounds and social degeneration on the other. The net gain appears to rest solely in the satisfaction of "national honor"—a metaphysical quality lying outside the wants of man.

In 1919 there were, in the United States, 23,000 fatal accidents; 575,000 cases of injury involving at least four weeks absence from work; 3,000,000 cases of injury involving more than one day's absence. The total labor days lost amounted to 296,000,000. The wage loss has been estimated at $853,000,000. Professor Irving Fisher has found that in industry alone, 270,000,000 working days a year are lost through sickness, of which about 40 per cent is preventible. These figures give some idea of the vast extent of human waste.

AND FINALLY

Modern industry, it is universally conceded, is operated on the basis of production for profit. The usefulness of the thing produced is a by-product. Realistic defenders of the present order admit this, but go on to explain that the profit motive provides so strong an *incentive* for production that more by way of consumable goods is thrown off—even as a by-product—than could possibly be attained under any system founded on production for use only. In short, it is claimed that the wayfaring man secures a greater net benefit from the profit system—despite its left-handed regard for his interests—than he could from any system designed directly to serve him.

This is no mean argument. It brings to the front the whole question of economic incentives to invent, produce, organize, distribute. We have, in the foregoing analysis,

waived this question entirely. We have assumed that men will work as hard to supply their own social wants as to supply stocks, bonds and mortgages for enterprising business men and bankers. And on the basis of this assumption we have noted the very large margin of waste which obtains. Mechanically speaking this waste is proveable—as any competent engineering survey would show.

But can it be proved psychologically? Is mankind at large capable of organizing and maintaining a whole industrial system on the same straight line methods which a pioneer family uses? Or does human intelligence lag and faint as the unit grows bigger, until the only control of a nation's industry lies in the blind chance of the profit-seeking struggle?

Frankly I do not know. I have only the experience of the Fuel Administration and its like to point to as a possible hope. I realize that the whole conception of waste as herein outlined is but a tilting at windmills until it can be shown that men are capable of directing their own industrial destinies on the single incentive of supplying their own bread and beauty. And that is why this pamphlet is called the "Challenge of Waste."

Bibliography *of* Economic Waste.

BOOKS

The Engineers and the Price System. Thorstein Veblen. N. Y.: B. W. Huebsch, 1921; 169 pp.

The Theory of the Leisure Class. Thorstein Veblen. N. Y.: Macmillan, 1899; 400 pp.

Old Worlds for New. A. J. Penty. London: G. Allen & Unwin, Ltd., 1917; 186 pp.

The Fallacy of Saving. J. M. Robertson.

Looking Backward. Edward Bellamy. Boston: Houghton, Mifflin, 1898 (written in 1889); 377 pp.

Fields, Factories and Workships. P. A. Kropotkin. Boston: Houghton, Mifflin, 1899; 315 pp.

Socialism in Thought and Action, Chap. I. Harry W. Laidler. N. Y.: Macmillan, 1920; 546 pp.

Creative Chemistry. Slosson.

The Economic Writings of Ruskin.

Modern Economic Tendencies. Sidney A. Reeve. N. Y.: E. P. Dutton & Co., 1921; 871 pp.

Waste in Industry. Committee on Elimination of Waste in Industry of the Federated American Engineering Societies (Hoover Engineers). N. Y.: McGraw-Hill Co., 1921; 409 pp.

Luxury and Waste. E. J. Warick.

Direct and Indirect Costs of the Great War. E. L. Bogart. N. Y.: Oxford University Press, 1919; 338 pp.

Cooperation, the Hope of the Consumer. Harris. N. Y.: Macmillan, 1918.

Poverty and Waste. Hartley Withers. London: Smith, Elder & Co., 1914; 180 pp.

The Conservation of Natural Resources in the U. S. Van Hise. N. Y.: Macmillan.

Triumph of Nationalization. Sir Leo Chiozza Money. London: Cassell & Co., Ltd., 1920; 275 pp.

America's Power Resources. Chester G. Gilbert and J. E. Pogue N. Y.: Century, 1921; 326 pp.

The Economics of Petroleum. Joseph E. Pogue. N. Y.: John Wiley & Sons, 1921; 375 pp.

The Coming of Coal. Robert W. Bruère. N. Y.: Associated Press, 1922; 229 pp.

The Four-Hour Day in Coal. Hugh Archbald. N. Y.: Harcourt & Brace, 1922.

The World's Food Resources. J. Russel Smith. N. Y.: Henry Holt, 1919; 634 pp.

Forest Products—Their Manufacture and Use. Nelson C. Brown.

Our Railroads Tomorrow. Edward Hungerford. N. Y.: 1922.

Wealth from Waste. Henry John Spooner. London: Routledge, 1918; 312 pp.

ARTICLES AND PAMPHLETS.

Waste. W. R. Ingalls. *Mining & Metallurgy.* March, 1922.

Fifty Points About Capitalism. Sir Leo Chiozza Money. (Pamphlet). London: C. Palmer & Hayward, 1919; 50 pp.

Wasting Human Life. A. M. Simons. (Pamphlet). Chicago: Socialist Party; 96 pp.

Delimitation and Transmutation of Industries. Sir Leo Chiozza Money. *New Statesman.* March 14, 1914.

Conservation Through Engineering. *U. S. Geological Survey Bulletin* No. 705.

Wastes of Uneven Production. C. E. Knoeppel. (Pamphlet).

Plant Idleness. W. N. Polakov. *Factory,* April, 1922.

Waste In Food Handling. A. H. Kirchhofer. *N. Y. Mail,* June 21, 1922.

Study in Distribution Costs. Joint Committee of Agricultural Inquiry. Congress, 1922.

Wholesale Marketing of Food. Report of the Federal Trade Commission, June, 1919.

Reconstruction and Production. 66th Congress. Senate Document No. 829.

Wasting Coal. Stuart Chase. *Labor Age,* May, 1922.

The Challenge of Waste. Stuart Chase. *Nation,* February 23, 1921.

Fuel Wastes in Steel Industry. F. G. Cutler in *Mechanical Engineering,* March, 1922.

Timber Depletion, Report of. U. S. Forest Service.

Wastes in the Milk Industry. Federal Trade Commission, June, 1921.

Waste in Industrial Power Plants. David Moffet Myers. *Management Engineering,* December, 1921.

Super Power Report of the Geological Survey, 1921.

Waists and Wastes. McAlister Coleman. *Labor Age,* March, 1922.

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